

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ralf BÖHNKE et al.

U.S. Serial No.: Filed Concurrently Herewith

Title of Invention: OFDM PRE-EQUALIZING

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PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Box Patent Application (35 U.S.C. 111)
Washington, D.C. 20231

Sir:

Before the issuance of the first Office Action, please amend the above-identified application as follows:

IN THE CLAIMS:

Please amend claims 5-8, 11-15 and 18-20 as follows:

5. (Amended) Method according to claim 1,

characterized in that

in the pre-equalizing step (10, 10') furthermore the phase of the subcarrier signals is respectively compensated at the transmission side according to the detected frequency channel characteristics (11, 11').

6. (Amended) Method according to claim 1,

characterized in that

depending on the detected frequency channel characteristics (11, 11') at each antenna element (3, 3') for each subcarrier signal the antenna element (3, 3') having the best channel characteristics (11, 11') for said subcarrier signal is used for transmission (2, 2').

7. (Amended) Method according to claim 1,

characterized in that

the power of the transmission signal is distributed to all antenna elements according to subcarrier frequency characteristics of the corresponding antenna element (3, 3').

8. (Amended) Method according to claim 1,

characterized in that

the pre-equalization (1, 1') of the power of the subcarrier signal is limited to an upper threshold.

11. (Amended) Method according to claim 9,

to adapt the modulation scheme of a subcarrier signal, the modulation scheme is simplified.

12. (Amended) Method according to claim 9,

to adapt the modulation scheme of a subcarrier signal, the subcarrier signal is not modulated at all.

13. (Amended) Method according to claim 9,

in case the modulation scheme of a subcarrier signal is adapted to reduce the bit rate of this subcarrier signal, the modulation scheme of at least one other subcarrier signal is changed to a more complex modulation scheme.

14. (Amended) Method according to claim 1,

characterized in that

the detection (11, 11') of the frequency channel characteristics is performed on the basis of received pilot symbols.

15. (Amended) Computer software program product,

characterized in that

it implements a method according to claim 1 when run on a computing device of a transmitting device.

18. (Amended) Device according to claim 16,

characterized in that

it further more comprises a phase compensator (1, 1') for adjusting the phase of the subcarriers respectively according to the detected frequency channel characteristics (11, 11').

19. (Amended) Device according to claim 16,

characterized in that

the equalizer (1, 1') limits the power of the subcarrier to an upper threshold.

20. (Amended) Device according to claim 16,

characterized in that

it is a base station (5) of a wireless transmission system.


REMARKS

Claims 1-20 remain in the application. Claims 5-8, 11-15 and 18-20 have been amended to eliminate multiple dependencies. Attached hereto is a marked up version of the changes made to claims 5-8, 11-15 and 18-20 by the current amendment. The attached page is captioned **"Version with markings to show changes made."** The filing fee has been calculated based upon these amendments to the claims.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE**In the claims:**

Please amend claims 5-8, 11-15 and 18-20 as follows:

5. (Amended) Method according to claim 1 ~~or 2~~,
characterized in that

in the pre-equalizing step (10, 10') furthermore the phase of the subcarrier signals is respectively compensated at the transmission side according to the detected frequency channel characteristics (11, 11').
6. (Amended) Method according to claim 1 ~~anyone of the preceding claims~~,
characterized in that

depending on the detected frequency channel characteristics (11, 11') at each antenna element (3, 3') for each subcarrier signal the antenna element (3, 3') having the best channel characteristics (11, 11') for said subcarrier signal is used for transmission (2, 2').
7. (Amended) Method according to claim 1 ~~anyone of claims 1 to 5~~,
characterized in that

the power of the transmission signal is distributed to all antenna elements according to subcarrier frequency characteristics of the corresponding antenna element (3, 3').
8. (Amended) Method according to claim 1 ~~anyone of the preceding claims~~,
characterized in that

the pre-equalization (1, 1') of the power of the subcarrier signal is limited to an upper threshold.
11. (Amended) Method according to claim 9 ~~or 10~~,

to adapt the modulation scheme of a subcarrier signal, the modulation scheme is simplified.
12. (Amended) Method according to claim 9 ~~to 11~~,

to adapt the modulation scheme of a subcarrier signal, the subcarrier signal is not modulated at all.

13. (Amended) Method according to claim 9 ~~anyone of claims 9 to 12~~,
in case the modulation scheme of a subcarrier signal is adapted to reduce the bit rate of this subcarrier signal, the modulation scheme of at least one other subcarrier signal is changed to a more complex modulation scheme.

14. (Amended) Method according to claim 1 ~~anyone of the preceding claims~~,
characterized in that
the detection (11, 11') of the frequency channel characteristics is performed on the basis of received pilot symbols.

15. (Amended) Computer software program product,
characterized in that
it implements a method according to claim 1 ~~anyone of the preceding claims~~ when run on a computing device of a transmitting device.

18. (Amended) Device according to claim 16 ~~or 17~~,
characterized in that
it further more comprises a phase compensator (1, 1') for adjusting the phase of the subcarriers respectively according to the detected frequency channel characteristics (11, 11').

19. (Amended) Device according to claim 16 ~~anyone of the claims 15 to 18~~,
characterized in that

the equalizer (1, 1') limits the power of the subcarrier to an upper threshold.

20. (Amended) Device according to claim 16 ~~anyone of claims 15 to 19~~,
characterized in that

it is a base station (5) of a wireless transmission system.

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